

4. On a Collection of Mammals from Abyssinia, including some from Lake Tsana, collected by Mr. Edward Degen. By OLDFIELD THOMAS, F.R.S.

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By the generosity of a gentleman interested in Abyssinia, Mr. Edward Degen was enabled, during the first half of the present year, to make a collecting expedition to Abyssinia, the resulting specimens being all presented to the National Museum. While in Abyssinia Mr. Degen was able to go to the little-known Lake Tsana, in the centre of the country, where, so far as I can ascertain, no mammals have ever been collected since the time of Rüppell.

As might have been expected, the mammals obtained at this locality prove to be of the greatest interest, quite a number of them being new, notably the fine Otter, the large Mongoose, and the Hare, while others, only hitherto obtained by Rüppell, form most valuable accessions to the Museum. The most noteworthy of these latter is the little "*Mus imberbis* Rüpp.," for which I have found it necessary to propose a new genus.

The donor is to be congratulated on the highly satisfactory results of Mr. Degen's trip, so far as the mammals are concerned, the more so as this group had of necessity to receive only secondary attention as compared with the magnificent collection of Fishes, from which Mr. Boulenger has described so many novelties.

1. COLOBUS ABYSSINICUS POLIURUS Thos.

2 ♂. Dodgit, W. Shoa. 26 June, 1902.

2. PAPIO DOGUERA Puch.

♂. Ahouillet, Kutai. 21 June.

3. MEGADERMA COR Peters.

Dried specimen. Dhar-Ala, Danakil Country. 25 January.  
"Found in this condition in a cave."

4. SCOTOPHILUS NIGRITA Schr.

♂ ♀. Harar. 10 January.

5. CROCIDURA DORIANA Dobs.

♂, 2 ♀ in skin, and ♂ in spirit. Addis Ababa. March and April.

"Caught in Legation Garden."

6. GENETTA, sp. inc. (near *G. dongolana* H. & E.).

o. Bijo. 16 January.

7. HERFESTES ICHNEUMON L.

♂. Billen, near the Hawash River in Adal country. 31 January.

8. *HERPESTES GALERA MITIS*, subsp. n.

♂. Zegi, Lake Tsana, 4000 feet.

A small-toothed Abyssinian representative of *H. galera*.

Fur long and coarse. General colour dark chocolate-brown all over, above and below, almost without annulations, some of the hairs only having a faint and scarcely distinguishable whitish subterminal ring. Head, feet, and tail darker even than the body, the last-named gradually becoming black terminally. A few wholly white hairs mixed with the fur of the fore-quarters.

Skull about the size of that of the true Southern *H. galera*, therefore considerably smaller than in the Central and East-African subspecies *robustus*. General form similar, but the posterior palate decidedly narrower, and the bullæ much lower and less prominent. Teeth smaller throughout, especially the last premolars above and below and the first molars.

Dimensions of the type (measured in skin):—

Head and body 600 mm.; tail 330; hind foot (c.) 100.

Skull—basal length 95; condylar length (basal length of P. Z. S. 1882, p. 65) 100; zygomatic breadth 62·5; interorbital breadth 21; breadth of brain-case 38; mastoid breadth 40·5; palate length from gnathion 56; breadth of posterior palate 8.

Teeth—greatest horizontal diameter of  $p^4$  10·8,  $m^1$  9·1,  $m^2$  5·8; of  $p^4$  7·5,  $m_1$  8·6,  $m_2$  5·9.

*Type.* The specimen above recorded. B.M. No. 2.9.9.6.

This fine Mongoose is of about the same size as the true Cape *Herpestes galera*, though with smaller teeth, the large *H. galera robustus* of East Africa and the Upper Nile separating the two. No Mongoose of this group appears to have been hitherto recorded from Abyssinia.

9. *ICTONYX*, sp. inc.

♀. Addis Ababa, 8000 feet. 26 March.

10. *LUTRA CAPENSIS MENELEKI*, subsp. n.

♂. Zegi, Lake Tsana, 4000 feet.

The Abyssinian representative of the Cape Clawless Otter.

Size very large; colour very strong and dark, deep chocolate-brown on the back, darkening anteriorly almost to black on the nape and crown, where it is indistinctly grizzled with white. Muzzle greyish white. Lips, cheek, and sides of neck sharply contrasted white. Ears brown, with prominently white edges. Chin and throat dull yellowish white; belly brown, little paler than the upper surface. Limbs and tail dark brown as usual.

Underfur of body all over, and notably of back, silvery white, the extreme tips only of the hairs brown. In true *L. capensis* the underfur is almost entirely brown.

Skull very broad and massive, larger and heavier in every way than a fine adult male skull from West Africa. Interorbital,

postorbital, and mastoid breadths all greater than in the allied skull, but the height of the skull scarcely greater, so that its flattened shape is unusually marked even for this group. Nasal opening broader than high, the converse being the case in the other forms. Pterygoid processes larger than in the West-African form, bullæ lower and flatter, mastoid and paroccipital processes larger, the last-named more distant from the condyles (10 instead of 6 mm.). These comparisons are all made with a skull distinctly older than the typical skull of the new form.

Dentition apparently quite as in true *L. capensis*.

Dimensions of the type (measured in skin):—

Head and body 900 mm.; tail 670; hind foot —; ear 25.

Skull—basal length 131; zygomatic breadth 106; mastoid breadth 102; interorbital breadth 35; tip to tip of interorbital processes 51; intertemporal breadth 28·5; palate length exclusive of median spine 66·5; breadth of posterior palate 16·5. Greatest diameter of *m*<sup>1</sup> 19·5.

*Type.* B.M. No. 2.9.9.13.

This magnificent Otter, which I have named in honour of His Majesty the Emperor Menelek, represents in Abyssinia the clawless species, *L. capensis*, of Southern and Western Africa, just as Herr Oscar Neumann's *L. concolor*, from Addis Ababa, represents the clawed one, *L. maculicollis*. Whether it is confined to Lake Tsana, or ranges into the rivers surrounding the slopes of the high grounds, remains to be proved.

As a subspecies it is recognizable by its broad low skull, broad nasal opening, dark colour, and silvery underfur.

It is possibly to this large Otter that Heuglin's references<sup>1</sup> to a Tsana Manatee are traceable, for the Otters which he mentions as such<sup>2</sup> are quite small ones—"Kaum die Grösse der Genetkatze," and native accounts of this large form might have led him to believe that the "Aila" or "Auli" was "wohl ein Manatus?"

#### 11. SCIURUS MULTICOLOR Rüpp.

♂ ♂ ♀. Zegi, Lake Tsana, 4500 feet. 14–22 May.

The female has 1–2 = 6 mammae.

#### 12. XERUS RUTILUS Cretzschm.

♀. Gildessa, Somali.

As Mr. de Winton has shown<sup>3</sup>, the names *X. dabagalla* Heugl. and *X. flavus* M.-Edw. are synonymous with *X. rutilus*, while the darker, more northern form should stand as *X. brachyotus* Hempr. & Ehr. (syn. *X. fuscus* Huet).

#### 13. TATERA, sp. (probably *murina* Sund.).

♂. Lake Zuai. 10 March.

<sup>1</sup> Reise N.O.-Afr. ii. p. 137 (1877).

<sup>2</sup> T. c. p. 39.

<sup>3</sup> P. Z. S. 1898, p. 765.

## 14. OTOMYS DEGENI, sp. n.

♂ (skin). Gombitchu, Shoa, 8000 feet. 16 April. *Type*.

2 ♀ (in spirit). Moncorar, Mietcha, Godjam, 9000 feet.

One deep and one shallow groove in each upper, and two deep grooves in each lower incisor. Lamina formula of molars  $\begin{matrix} 3-2-3 \\ 4-2-2 \end{matrix}$ .

Fur comparatively thin and poor, very different from the deep rich fur of *O. jacksoni*; shorter hairs of back about 13 mm. in length. General colour strongly lined pale brown, between raw umber and isabella of Ridgway, without marked metallic sheen. Sides rather more buffy. Under surface but little lighter, the hairs broadly slaty basally, dull buffy terminally. Head like body, inconspicuous yellowish patches above and below eye and round ear. Backs of ears brown, edges and inner surfaces yellowish. Hands and feet dull greyish. Tail brown above, dull greyish on sides and below.

Skull large and heavily built, conspicuously stouter than in *O. jacksoni*. Nasals very broad, as much expanded in front as in *O. irroratus*. Posterior palate ending about level with the sixth lamina of  $m^3$ .

Incisors very broad, the upper ones with one deep sharp groove dividing off the outer third of the tooth, and the front of the inner part faintly and indistinctly concave. On the extreme inner angle of the tooth there is also a third minute shallow and almost imperceptible groove. Lower incisors with two deep and equal grooves, dividing each tooth into three equal portions. Molars broad; the posterior one above with eight laminae, the anterior lower with four.

Dimensions of a female specimen in spirit, not the type:—

Head and body 161 mm.; tail 90; hind foot (s. u.) 28.5; ear 22 × 21.

Skull of type—upper length from back of interparietal 36.2; greatest breadth 19.7; nasals 16.5 × 7.5; interorbital breadth 4.4; interparietal 4.7 × 9; diastema 9; palate length 17.8; palatal foramina 7.3; length of upper molar series (crowns) 8.2.

This *Otomys* might have been supposed to be Heuglin's "*Oreomys typus*,"<sup>1</sup> described from the mountains of Simien, but that animal is distinctly said to have three sharp and deep grooves on both the upper and lower incisors, so that *O. degeni*, with two deep ones below and one deep and two indistinct ones above, can hardly be the same, whatever allowance for error ought to be made.

*O. jacksoni* Thos., from Mt. Elgon, is otherwise the nearest species, and that is smaller, with a more delicately built skull, with only 7 laminae in  $m^3$ , and, though the number of the incisor grooves is practically the same, their spacing is different. Externally *O. jacksoni* is a much darker-coloured and thicker-furred animal.

<sup>1</sup> Reise N.O.-Afr. ii. p. 76 (1877). Since the above was written, Dr. K. Lampert of Stuttgart has kindly sent me some further particulars about the typical skull of *O. typus*, which conclusively prove that *O. degeni* is distinct from it.

I have much pleasure in naming this distinct species after Mr. Degen, the collector of the present interesting series.

15. *MUS ALBIPES* Rüpp.

2 ♂, 1 ♀. Addis Ababa. March, April.

This species is readily distinguished by its long tail from the other members of the group. Mr. Pease also obtained two specimens of it at Lake Zuai.

16. *Mus* spp.

3 ♂, 3 ♀. Addis Ababa. February to March.

2 ♂. Hawash R. March.

♂. Gubre, Godjam, 6000 feet. 9 May.

♂. Abulie, Kutai. June.

Besides the long-tailed, long-skulled *M. albipes*, there appear to be more than one species of the difficult *macrolepis-lateralis* group in the collection, but without further material, with flesh-measurements, it is impossible to distinguish them or make out what names they should bear. Several of Heuglin's names appear to belong to this group.

17. *LEGGADA MAHOMET* Rhoads.

♂. Addis Ababa. 5 April.

18. *ARVICANTHIS ABYSSINICUS* Rüpp.

♂ ♀. Addis Ababa. March.

♂ ♀. Yah-Yah, Shoa. April.

4 ♂. Lake Tsana. May and June.

♂ ♀. Hawash R. February and March.

♀. Lake Zuai. March.

For all these Abyssinian *Arvicanthes* I provisionally use Rüppell's name of *abyssinicus*, with typical specimens of which some of them entirely agree. But on the one hand there may be more than one definable form among them, and on the other identification has to be made of quite a number of other names which have been given to members of the group. Thus *Meriones lacernatus* Rüpp. and *Mus ochropus* and *M. rufidorsalis* Heugl. are all evidently forms of *Arvicanthis*, and will have to be identified when further material is available. But the North Somali *Arvicanthis*, which has been identified with the East-African *A. neumanni* Matsch., is clearly distinct and is now described<sup>1</sup>.

<sup>1</sup> *ARVICANTHIS SOMALICUS*, sp. n.

A small pale species allied to *A. neumanni*.

Size markedly less than in the other members of the group. General colour pale sandy buff lined with brown, becoming more "pinkish buff" on the rump. No trace of a spinal dark line. Head paler, almost whitish, eye-rings and ears sandy fulvous. Under surface dull whitish, the hairs dark basally. Upper surface of hands and feet buffy white. Tail blackish above, dull fulvous on the sides and below.

Skull small, strongly built, with strongly-ridged supraorbital region.

## 19. PELOMYS HARRINGTONI, sp. n.

♂. Katchisa, Kutai, W. Shoa. 23 June.

General appearance of *P. dembeensis* above, but belly with three bright buffy lines.

Size about as in *P. dembeensis*, smaller than in *P. fallax*. Fur rather crisp; general hairs of back about 12 mm. in length, the longer hairs overtopping them by about 5-6 mm. General colour dark lined olivaceous, more distinctly greenish than in *P. fallax*. Sides paler, more fulvous and more heavily lined. Under surface white (the hairs white nearly to their roots), with three bright buffy yellow lines running down it, one median on the chest and upper belly, and two lateral, bordering the dark colour of the sides the whole length of the animal, from the upper lip down the neck, body, and front of hind limbs to the ankles. Head like body, indistinct yellowish spots above and below eyes. Ears brown, their basal hairs yellowish. Fore limbs grizzled olive externally, darkening to brown on the hands; white on the inner surface. Hind legs olive externally, white edged with yellow internally; feet grizzled fulvous and brown. Tail thinly haired, blackish above, dull yellowish below.

Skull comparatively small and slender; interorbital region narrow, finely beaded. Palatal foramina well open, not markedly narrowed posteriorly, their hinder end level with the anterior row of  $m^1$ ; posterior edge of palate level with the middle of  $m^3$ .

Incisors narrower than in *P. fallax* and much less distinctly grooved, the groove in fact almost obsolete. Molars smaller and more delicate than in *P. fallax*, but with the same essential distinctions from those of *Golunda*. Inner tubercle of each lamina throughout larger, and middle one smaller than in *P. fallax*, so that the inner one is about three-fourths the size of the middle one or more, while in *P. fallax* the middle tubercle is always twice the breadth of the inner one.

Dimensions of the type, taken on the skin:—

Head and body 140 mm.; tail 90+— (imperfect); hind foot (s. u.) (wet) 27·3; ear (dry) 15.

Skull—tip of nasals to back of frontals 25; greatest breadth 14·5; nasals 12·5 × 3·8; interorbital breadth 4·1; palate length from hensenion 13·3; diastema 8·5; palatal foramina 6·6 × 2·2; length of upper molar series 6.

*Type.* ♂. B. M. No. 2.9.9.36.

The only described species allied to *P. harringtoni* is Rüppell's *Mus dembeensis*, considered by Mr. de Winton<sup>1</sup> (although with

Dimensions of the type (measured in the flesh):—

Head and body 133 mm.; tail 104; hind foot (s. u.) 23; ear 16.

Skull—greatest length 30; basilar length 26; greatest breadth 16; interorbital breadth 5; length of upper molar series 5·9.

*Hab.* Northern Somali-land. Type from Shuk, alt. 4000 feet.

*Type.* Old male. B. M. No. 97.12.3.9. Collected and presented by E. Lort Phillips, Esq. Many specimens examined.

<sup>1</sup> P. Z. S. 1901, p. 81.

remarks on its molar differences) as an *Arvicanthis*, but which I think is also more nearly allied to *Pelomys*. From that species *P. harringtoni* differs by its striped belly and smaller molars.

I have named this handsome and remarkable species, which is distinguished from all its allies by the brilliant striping of its under surface, in honour of Col. Harrington, the British Resident at Addis Ababa, to whose assistance all British travellers in Abyssinia are so much indebted.

With regard to the use of the name *Pelomys*, a genus of recent years synonymized with the Indian *Golunda*, I have come to the conclusion that after all the two forms may well be considered as generically distinct. Like as they are in external characters, and in skull and incisor structure, the molars of the two groups show such differences in detail that, combined with the different geographical distribution, I think it would be best to keep them apart. While the molars of *Pelomys* are of fairly normal murine structure, with subequal anterior accessory tubercles,  $m^2$  and  $m^3$  of *Golunda* have their antero-internal tubercles hypertrophied and their antero-external ones minute or obsolete, so as to give a peculiar oblique appearance to the teeth. In outline the latter are also broader, shorter, and less narrowed posteriorly. The teeth of *Golunda* have been well figured by Blanford<sup>1</sup> and those of *Pelomys* by Peters<sup>2</sup>.

Even after the removal of *Golunda* it is by no means certain that *Pelomys dombeensis* and *P. harringtoni*, with their almost ungrooved incisors, ought to be considered as congeneric with *P. fallax*, but I do not care to separate them without seeing what representative forms occur in the intermediate countries.

#### 20. LOPHUROMYS FLAVOPUNCTATUS Thos.

2 ♂, 2 ♀. Addis Ababa, 8000 feet. February and March.

♂. Yah-Yah, Shoa. 18 April.

The type of this species, which was discovered by Sir W. C. Harris during his Mission to Shoa in 1843, was probably obtained at Ankober, about 100 miles N.E. of Addis Ababa.

As is usual in this genus, the bellies of these specimens vary considerably in the intensity of their yellowish suffusion, the two females being the most strongly coloured. The upper surfaces are also by no means uniform in tone.

#### 21. MURICULUS IMBERBIS Rüpp.

o. Zige, Lake Tsana, 4000 feet. 1 June.

#### MURICULUS, gen. nov.

Size very small; proportions about as in *Lophuromys*. Hind feet with the fifth digit short, though not quite so short as the hallux. Claws small, not markedly elongated.

<sup>1</sup> Mamm. Ind. p. 427 (1891).

<sup>2</sup> Reise Mossamb., Mamm. pl. xxxv. fig. 9 (1852).

Fur thick, close, and rather crisp, some of the hairs flattened, though not to be called spiny. Back lineated in the type species. Tail short, closely but finely hairy.

Skull stoutly built, rather like that of a small short-headed *Lophuromys*. Palatal foramina very long; posterior palate continued some way backward behind molars. Incisors narrow, smooth in front, markedly thrown forwards, so that even the tips of the upper ones do not curve backwards towards the throat. Molars strictly murine, without any marked characteristics.  $m^2$  and  $m^3$  each with a large antero-internal accessory cusp, and the former only with a small antero-external one.

Type. *Mus imberbis* Rüpp.

Some years ago, by the kindness of the authorities of the Senckenberg Museum, I had the opportunity of examining the type of Rüppell's *Mus imberbis*, and saw at once that it could not be assigned to any known genus. Now that a specimen has been secured by Mr. Degen I venture to give it a generic name.

In a general way *Muriculus imberbis* looks like a pigmy *Arvicanthus* or *Lophuromys*, and, while clearly not assignable to any known genus, is somewhat lacking in definitive generic characters, its projecting incisors being its most marked feature. Its whiskers are as abundant as usual, Rüppell's specimen having no doubt lost them accidentally, and it has a distinct dorsal black stripe down the posterior half of the spine. This stripe is not mentioned by Rüppell, but is present in the type, as I have personally noted.

In some ways this is the most interesting of Mr. Degen's captures, and fills an important lacuna in the National Collection of Muridæ.

## 22. PECTINATOR SPEKEI Blyth.

o. Las Mahan, Somali.

## 23. LEPUS, sp. inc.

♂. Marmasa, N.E. of Mt. Asebot. 25 January.

o. Miessa, S. of Mt. Asebot. 23 July.

Long-eared Desert Hares of the *L. æthiopicus* type, not satisfactorily determinable without further material.

## 24. LEPUS FAGANI, sp. n.

♂. Zegi, Lake Tsana, 4000 feet. 28 May.

"In scrub."—E. D.

A remarkably dark-coloured Hare, quite unlike any of the pale N. African species.

Size medium. General colour very dark for an African Hare, the general tone of the back approaching Ridgway's "mummy-brown"; the underfur with pale slaty greyish bases and buffy tips, the long hairs light for their basal and black for their



terminal halves, with a buffy or dark isabelline subterminal band. Under surface mostly dull sandy or buffy, with but little white; not sharply defined from the upper surface. Crown of head grizzled mummy-brown, like back, a large area round each eye whitish buffy. Ears of only medium length, their outer surface dark grizzled brown, with an inconspicuous patch of dull black behind their tips; fringe of long hairs on lower part of anterior edge, of shorter hairs along the posterior edge, dull sandy; inner surface brown proximally, sandy terminally. Nape-patch rather paler than "cinnamon-rufous." Fore limbs like nape-patch at elbows, becoming sandy buffy on the hands; feet also dull sandy buffy. Tail unfortunately wanting in the only specimen.

Skull stoutly built, with a long heavy muzzle; supraorbital wings unusually small and weak; anterior shoulders of zygomata large and prominent, the breadth across them exceeding the posterior zygomatic breadth; palatal bridge of medium breadth; bullæ decidedly small.

Upper incisors each with a deep but simple enamel indentation, corresponding about to no. xiii. of the series figured by Dr. Major<sup>1</sup>; the groove entirely filled up with cement.

Dimensions of the type, measured in skin:—

Head and body 510 mm.; hind foot 102; ear-opening (wet) 90.

Skull—greatest length 90·5; basilar length 68·8; zygomatic breadth 40·3; nasals, length diagonally 41, breadth 20; inter-orbital breadth 21, breadth across supraorbital wings 21·7; intertemporal breadth 10·7; palatal foramina  $22 \times 8\cdot5$ ; palatal bridge 7·4; antero-posterior diameter of bullæ 10·2.

*Type.* The specimen recorded above. B. M. No. 2.9.9.54.

This very interesting Hare differs widely from all the pale long-eared N. African Desert Hares, and is apparently the representative in Abyssinia of the *L. whytei* group of Nyasa and Central Africa, with which it somewhat agrees in cranial characters and in the proportions of its ears.

I have named it in honour of my friend, Mr. Charles E. Fagan, Assistant Secretary of the Museum, to whom Mr. Degen, like all other collectors making expeditions for the benefit of the National Museum, has been much indebted for assistance.

## 25. PROCAVIA BRUCEI SOMALICA Thos.

Adult ♂ & young. Bijo. 16 January.

## 26. ORYCTEROPUS AFER ÆTHIOPICUS Sund.

Andota. May.

<sup>1</sup> Trans. Linn. Soc., 2nd ser. Zool. vii. p. 468 (1899).